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If those students classified as underachievers are to receive maximum benefit from their educational experience, efforts must be made to identify their problem and aid them at the elementary school level. A review of the literature shows that most studies concerned with underachievers have been concentrated at the secondary or college level. A group of underachieving fourth graders, as well as normally achieving students in eleven elementary schools in Grand Forks, N. D., was studied. Intelligence was measured by the Wechsler Intelligence Scale for Children. Other instruments used included the California Test of Personality and Gronlund's Sociometric Test designed to measure peer relationships. Students were given group counseling by six male graduate students working toward their Ph.D. degrees in that field. Attempts were made to study the relationships between peer interaction, sex, personality variables, treatment conditions, improved grade point average, and underachievement, as well as inter-relationships. The treatment consisted of individual and group counseling sessions based on a non-directive approach with the use of appropriate play therapy techniques and reading instruction. Results were analyzed statistically. It was concluded that: 1) achievers tend to have better peer relationships and personality adjustment than do underachievers, regardless of sex; 2) males reacted positively to group counseling while females reacted negatively on the criteria of improvement in GPA and certain CTP scales; and 3) underachievement, however, is predominantly a male problem with the ratio of males to females greater than 3:1. Several limitations were inherent in the study which could be altered in future research. There were too few counseling sessions, and counseling techniques used were developed for secondary and college level students.							
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COUNSELING AND GUIDANCE FOR UNDERACHIEVING FOURTH-GRADE STUDENTS

Cooperative Research Project No. 2196

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University of North Dakota

**Counseling and Guidance for Underachieving
Fourth Grade Students**

Cooperative Research Project No. 2196

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1964

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INTRODUCTION

A long standing problem in education has been the student who does not do as well academically as might be expected. This problem has been the focus of numerous investigations. Various attempts have been made to identify the underachiever, to identify concomitants of underachievement, and to modify this type of behavior through different methods of remedial and therapeutic techniques.

A review of the literature dealing with underachievement reveals that most researchers have dealt with the problem at the secondary school and college level. If the underachiever is to gain maximum benefit from his educational experience, early identification and treatment of this behavior is necessary. Effort should be made to determine the earliest age at which this type of behavior can be meaningfully identified and most easily modified. If educators hope to reduce the incidence of scholastic underachievement, greater research emphasis should be given to the problem as it exists at the elementary school level. A prophylactic approach rather than the traditional remedial approach at the secondary school or college level would seem to be educationally and developmentally more appropriate.

The fact that underachievement exists at the elementary school level has been demonstrated by Barrett (1957) and Shaw and McCuen (1960). Barrett retrospectively studied the achievement of a group of ninth grade students starting with their fifth grade records. He found that underachievement was measurable at the fifth grade level. Based on previous

records from grades one through eleven, Shaw and McCuen studied in retrospect a group of twelfth grade students. It was found that for males, underachieving behavior was detected at the first grade level and that the achievement of these students was significantly different from the achieving student by the third grade. For the female group, the difference in achievement between achievers and underachievers was noted at grade six and was significantly different by grade nine. In spite of the evidence of underachieving behavior existing at the elementary level, the findings of systematic attempts to modify this behavior have seldom been reported.

Previous research has also failed to give adequate information about concomitants of scholastic underachievement at the elementary school level. With this lack of empirical information, elementary educators have been left with the choice of either generalizing from the findings of research conducted at the secondary school and college level or generalizing from isolated elementary school case studies to the total population of elementary school underachievers. It is obvious that neither of these approaches is educationally valid.

A further limitation of much of the research in this area has been the emphasis placed upon studying the superior student to the neglect of the average or below average student. It is logical that bright students can make a greater intellectual contribution to our society than the average or below average student. Yet, it is questionable whether this is a valid enough reason to overlook those of lesser intelligence who are also underachievers. If American education is to benefit all educable

youth, it is important that emphasis be given to studying underachievement at all levels of ability represented in our schools.

In the light of the previously discussed problems, this study attempted to identify some of the concomitants of underachievement as it existed at the fourth grade, regardless of ability level, and to modify underachievement and related behavior patterns through the use of selected guidance techniques.

RESEARCH QUESTIONS

In the attempt to identify certain concomitants of underachievement, the following questions were answered, based on pre-treatment analyses comparing underachievers and achievers:

1. Is there a significant difference between measured peer relationships of underachievers and achievers?
2. Is there a significant difference between measured peer relationships of underachievers and achievers when analyzed by sex?
3. Is there a significant difference between measured personality variables of underachievers and achievers?
4. Is there a significant difference between measured personality variables of underachievers and achievers when analyzed by sex?

To evaluate the effectiveness of the treatment conditions in modifying the behavior of underachievers, the following questions were answered:

Peer Relationships

5. Is there a significant relationship between the treatment

conditions and change in peer relationships?

6. Is there a significant relationship between the treatment conditions and change in peer relationships when analyzed by sex?
7. Is there a significant relationship between the treatment conditions and change in peer relationships when analyzed by ability level?

Grade Point Average

8. Is there a significant relationship between the treatment conditions and change in grade point average?
9. Is there a significant relationship between the treatment conditions and change in grade point average when analyzed by sex?
10. Is there a significant relationship between the treatment conditions and change in grade point average when analyzed by ability level?

Personality Change

11. Is there a significant relationship between the treatment conditions and change in measured personality variables?
12. Is there a significant relationship between the treatment conditions and change in measured personality variables when analyzed by sex?
13. Is there a significant relationship between the treatment conditions and change in measured personality variables when analyzed by ability level?

REVIEW OF THE LITERATURE

A review of the literature dealing with scholastic underachievement suggests that various questions have been asked and research hypotheses stated in the attempt to understand this problem. These studies suggest two conclusions: first, there has been no consistent methodological approach to studying the problem of underachievement; and secondly, no consistent pattern of factors related to underachievement has been found.

The conflicting evidence (Peterson, 1963) found in the area of underachievement could have resulted from inconsistencies among research designs. These differences might involve such things as the use of different operational definitions of underachievement, or the discrepancy in findings may be due to different scholastic ability levels employed in the studies. As an example, the findings of a research investigation dealing with high ability underachievers may not be applicable to average or low ability underachievers.

Other factors often not accounted for, which might be related to discrepancies in the findings, are differences between sexes, different grade levels, and the use of different psychological instruments to measure outcomes. With all of these possible methodological considerations, agreement should not necessarily be expected in the findings of studies dealing with different segments of the school population. Therefore, the article by Peterson criticizing the lack of empirical agreement on underachievement might be considered a somewhat premature and

unrealistic expectation of what can be accomplished by researchers. As more meaningful research is conducted, it can be expected that a pattern of related factors will emerge from these efforts which will present a more consistent description of the underachiever.

The review of the current literature for this study was conducted to summarize the results of previous research on underachievement. The findings of the studies cited do not necessarily apply to the fourth grade population employed in this study. Yet, these findings do present to the reader the current evidence as it applies to different and specific populations of underachievers. These findings do not necessarily relate to the specific questions being asked in this study, but rather give a survey of the kinds of questions asked about underachievement and factors related to this pattern of behavior.

The review of the literature was divided into two major areas: research dealing with concomitants of underachievement and implementing change in the behavior of underachievers through various guidance and counseling techniques.

Concomitants

Previous research has tentatively identified several factors that are related to underachieving behavior.

Home Environment

One of these areas of research which has been given considerable attention and has resulted in meaningful information is the psychological climate of the home. Several studies have indicated that the home environment of the underachiever is different in certain respects from the home environment of the achiever. These differences are possible

contributing factors in the development of underachieving behavior.

Barrett (1957) found that parents of ninth grade underachievers tended to be neutral to, or uninterested in education. They also tended to be more dominant, overanxious, over solicitous, and inconsistent in their attitudes toward their child than were parents of achieving students. It was also found that in the homes of the underachievers there was a greater lack of cooperativeness between family members.

Kurtz and Swenson (1951) demonstrated that the home environment of secondary school achievers tended to be psychologically more favorable than the home environment of the underachiever. The parents of achievers tended to show greater interest, affection, and pride in their children. The investigators concluded that a favorable home environment was related to achievement. Morrow and Wilson (1961) concurred by stating that parents of achievers fostered positive attitudes toward school, school work, teachers, etc. Their conclusion was that a supportive family atmosphere fostered academic achievement.

Although the literature generally supports the notion of a familial influence in underachieving behavior, Karnes (1961) found somewhat different results. From this study he concluded that parents of elementary school underachievers and overachievers were not different in their attitudes towards their children.

In a review of the literature, Fliegler (1957) discussed the effect of a negative home environment and concluded that this type of home background is not conducive to the formation of a wholesome personality which, in turn, may result in underachievement.

Somewhat related to this was Kimball's (1952) finding that a significantly higher number of underachievers at the high school level revealed

an essentially negative relationship with their fathers.

Passow and Goldberg (1958) discussed two characteristics which differentiated the family of the male achiever from the family of the male underachiever at the high school level. The fathers of the achieving students were employed in higher occupational groups while a greater number of mothers of underachievers worked outside the home.

These studies, while not describing a definite type of home environment as being related to underachievement, indicated that the psychological environment of the home appeared to be an important determiner of achieving and underachieving behavior.

Attitudes

Another area related to underachievement that has been studied is the students' attitudes toward school and the learning experience. Based on a review of the literature, Fliegler (1957) suggested that the underachiever may be a maladjusted youngster whose inadequate school relationships lead to negative teacher identification. This attitude contributes to the students' inability to achieve in a learning situation and to the setting of lower levels of aspiration. Barrett (1957) also empirically demonstrated that underachievers exhibited a predominantly negative attitude toward school.

Lum (1960), in a study comparing the under- and overachieving female college students, found that the underachievers had less motivation for studying, were less self confident, and were less able to work effectively while under psychological pressure. The author suggested that academic drive, therefore, rather than good study habits was the factor differentiating overachievers from underachievers.

Closely related to this finding were the results found by Todd, Terrell, and Frank (1962). These investigators reported that a larger proportion of superior ability college achievers perceived doing well in academic course work as being important to the attainment of long-range goals. It was also noted that underachievers had lower expectancies of doing well in their academic course work than did achievers.

Frankel (1960) reported that in comparing matched groups of achieving and underachieving high school boys of high ability, underachievers were concerned about current scholastic difficulty while achievers were more concerned with future-oriented problems such as choice of college or occupation.

Malpass (1953) found that eighth-grade students' perceptions of school were related to academic achievement as measured by semester grades. This relationship did not exist between perceptions of school and achievement as measured by a standardized achievement test. It could be hypothesized that students with certain perceptions of school were learning course content but because of a negative "halo effect" were being penalized in terms of teacher evaluations. Shaw and Brown (1957) found the same type of discrepancy between the criteria of grades and achievement tests for college students. This would seem to lend further support to the possibility of certain kinds of classroom grading discrimination practices.

The results of these studies indicated that certain attitudes toward school and the learning experience may be important concomitants of underachieving behavior.

Personality Factors

The personality of the underachiever has been the focus of a number

of investigations. Various studies have attempted to identify personality characteristics that might be related to underachieving behavior. The majority of studies has failed to identify any consistent global personality differences between achievers and underachievers. However, several studies have indicated that in given areas there are differences between the two groups.

Shaw and Brown (1957) and Shaw and Grubb (1958) found that underachievers tended to be more hostile towards others than did achievers. These two studies dealt with bright underachievers at the college and high school level respectively.

Kimball (1952) reported that prep school underachievers of high ability had greater aggressive feelings but that these feelings were a source of guilt and anxiety. As a result, these students were less able to give direct effective expression to these kinds of feelings.

The underachievers' self concept has been the subject of several investigations. Morgan (1952) found that such traits as a sense of responsibility, the need to achieve, and self-confidence were related to achievement at the college level. The findings of Lum (1960) which indicated that college female underachievers were less self-confident than achievers concurred with Morgan's findings.

Shaw, Edson, and Bell (1960) studied the self concept of bright, underachieving high school students. The following conclusions were drawn from the results of the study: male underachievers seem to have more negative feelings about themselves than do male achievers, and female underachievers tend to be ambivalent with regard to their feelings about themselves. The authors were careful to point out that the data

did not indicate whether the feelings of underachievers toward themselves were causes or results of the underachieving behavior.

Passow and Goldberg (1958) in working with underachievers and achievers found that underachievers had more symptoms of basic personal and social problems.

Drake (1962) discussed two studies conducted at the college freshman level in which the Minnesota Multiphasic Personality Inventory (MMPI) was employed as a measure of adjustment. It was found that high scores on the psychopathic-deviate and manic-depressive scales were significantly associated with the low achievement in both the original and cross-validation groups.

Hoyt and Norman (1954) identified groups of "maladjusted" and "normal" male college students using the MMPI as the criterion measure. The hypothesis to be tested was that maladjustment significantly affects college achievement. The researchers found that academic grades could be more accurately predicted for the "normal" group but that in terms of personality profiles no differences were found in the per cent of underachievers and overachievers who score high and low on any MMPI scale.

Roberts (1962) employed the California Psychological Inventory to identify personality differences between high school achievers and underachievers. It was found that female achievers scored significantly higher on the scales of dominance, sociability, social presence, well being, responsibility, socialization, self-control, and achievement. The male achievers scored significantly higher on the scales of socialization, achievement, and femininity.

Krug (1959) used two different prediction methods to identify college

underachievers from the same population. He then compared these groups independently with overachievers. It was noted that the group based on an aptitude score prediction method was significantly lower on the achievement, order, and endurance scales of the Edwards Personal Preference Schedule (EPPS) while significantly higher on the affiliation and heterosexuality scales. The comparison between the underachieving and overachieving groups in terms of the performance score based prediction resulted in no significant difference on the EPPS. These findings showed that two different methods of identifying underachievers partially resulted in the identification of different subjects. It further suggested that the males and females identified may have been different in terms of personality characteristics. As mentioned previously, this would be one of the major factors contributing to the discrepant findings on underachievers.

On the basis of these various findings, it would appear that the relationship between achievement and personality adjustment has not yet been clearly demonstrated.

Peer Relationships

The type of peer relations of achievers and underachievers has been the focus of a number of studies. Morgan (1952) found that with a college population, awareness of and concern for others was positively related to achievement. Kurtz and Swenson (1951) found that achievers and overachievers had a greater number of positive peer relations than did underachievers. Barrett (1957) also noted that students showed greater acceptance of achievers than of underachievers.

Aptitudes

Ability and aptitude differences have also been found to exist between achievers and underachievers. Barrett (1957) found that on the Differential Aptitude Test Battery underachievers tended to be less gifted in numerical and abstract reasoning. Achievers also tended to show a greater interest in reading. Frankel (1960) found that male high school underachievers were less gifted in mathematics and verbal aptitude than were achieving students.

Summary for Concomitants

It may generally be concluded that although there were discrepant findings in the literature, there tended to be evidence of certain trends relating various factors to underachievement. With further research it is probable that a more complete and consistent picture of the underachiever will emerge.

Treatment Effects

The second major area of literature reviewed was the effectiveness of counseling and guidance techniques in modifying underachieving behavior. Most of the reported findings involving these kinds of behavior dealt with the treatment of secondary school or college level underachievers. Practically none of the empirical findings reported dealt with the treatment of underachieving behavior of elementary school children.

The review of the literature was subdivided to correspond to the four treatment conditions employed in this investigation: Individual Counseling, Group Counseling, Reading Instruction, and the "Hawthorne-Effect" Control Group.

Individual Counseling

The fact that underachievement is defined as a discrepancy between

ability and academic performance determines one of the major goals of treatment, that of increased academic performance. It would also follow that if underachievers are different from achievers on factors such as personality characteristics, attitudes, self concept, etc., treatment might also bring about positive changes in these areas.

Baymur and Paterson (1960), working on the theory that emotional factors were involved in underachievement, employed a "therapeutic" counseling approach in an attempt to reduce underachievement. They utilized individual counseling, group counseling, and a one-session motivational group counseling. When compared to the control group on the criteria of changes in self concept, improvement in study habits and attitudes, and increased grade point averages no significant differences were found.

Fahey and Waller (1941) found similar results after working with underachieving high school students. An attempt was made to diagnose the various individual problems of underachievers. These problems became the focus of the individual counseling sessions held with the students. No significant differences were noted between the experimental and control group in terms of increased academic performance following the counseling sessions.

A study by Calhoun (1956) resulted in a significant change following individual counseling at the junior high school level. A standardized achievement test and school grades comprised the criteria. Following the treatment it was found that no significant difference existed between the groups on the achievement test, but that in terms of grades the experimental group improved significantly.

Serene (1953) employed a "motivational counseling" approach in the

attempt to increase the academic performance of high school underachievers. The individual counseling sessions were structured towards discussing the student's ability as related to his level of achievement. Although no statistical statements were made, the author suggested that there was evidence of increased academic performance for the experimental group.

The evidence for the effectiveness of individual counseling as a method of improving academic performance is inconclusive at this point.

Group Counseling

As previously cited, Baymur and Paterson (1960) found that group counseling was ineffective in changing the academic performance of underachievers.

Sheldon and Landsman (1950) investigated the therapeutic effectiveness of a non-directive group therapy class as compared to a regularly conducted mental hygiene class. The students in both classes were having academic difficulty. The points of comparison were the California Test of Personality, Iowa Silent Reading Test, and grade point average. The results of the study showed that the non-directive group improved significantly over the traditional class in terms of improvement in grades. No other differences were found.

Broedel, Ohlsen, Proff, and Southard (1960) investigated the effectiveness of group counseling in changing the academic performance of gifted adolescents. They hypothesized that group counseling would increase the clients' acceptance of themselves and improve their ability to relate to others and hence motivate them to accept and use their untapped intellectual resources. It was found that the counseled groups did not improve

significantly over the control groups in academic performance. The investigators concluded that underachievement is a behavior pattern that requires more intensive treatment than the 16 sessions employed in their study.

Passow and Goldberg (1958) utilized a homeroom guidance program as a technique for modifying underachieving behavior of gifted high school students. The authors observed that there was tentative support for this type of approach in reducing underachievement although no probability statements were made as to its effectiveness.

Reading Instructions

Barbe (1952) reported the results of a study involving reading instruction at the college level. One of the major purposes of the study was to determine if grades would improve following instruction in this area. It was found that the experimental group made a significant gain in grade point average over the control group.

Entwisle (1960) reviewed the reported findings of investigations employing study-skills courses. The author reviewed 22 studies, many of which contained reading instruction as a part or all of the course. It was concluded that reading and study-skills instruction is usually followed by improvement in academic performance. It should be noted that the majority of studies reviewed by Entwisle involved college students and none involved elementary school students.

Based on the findings of Barbe and the review by Entwisle, it would appear that instruction in reading and study skills has been a useful technique in the improvement of academic performance.

"Hawthorne-Effect"

A review of the literature on the treatment of underachievement revealed only one study which controlled for the "Hawthorne-Effect". This effect deals with the changes that occur in behavior as a result of the attention given to experimental subjects. Guthrie and O'Neill (1953) studied the effectiveness of a program of dormitory counseling in improving academic performance. One of the techniques employed was a group that was given the attention of meeting with a counselor in a non-counseling situation. Although personal attention has been established as a means of changing behavior, its effectiveness in changing underachieving behavior was not established.

Summary for Treatment Effects

Based on the review of the literature, it would appear that reading and study skills has offered the most promising results in attempting to modify poor academic performance. Whether this would be applicable to underachieving elementary school students has not been demonstrated.

There appears to be some evidence that individual counseling and group counseling are useful in the modification of underachieving behavior. The "Hawthorne-Effect" has not been studied enough to warrant any statement as to its effect on academic underachieving behavior.

PROCEDURE

The two major objectives of this investigation were to identify some of the concomitants of underachieving behavior and to ascertain if the treatment conditions were related to changes in grade point average (GPA), peer relationships, and personality variables. In order to accomplish these goals, the following procedures were employed.

Sample

The Ss employed in this investigation consisted of all fourth grade students in the public school system at Grand Forks, North Dakota. Eleven of the elementary schools were located within the city limits while two were at the Grand Forks Air Force Base. These 13 elementary schools contained 26 fourth grade classrooms (including four combination classes composed of fourth grade students and students from another grade) with approximately 700 students. There were twenty-four female teachers and two male teachers.

Identification of Underachievers

All Ss were first administered the Wechsler Intelligence Scale for Children (WISC) - Verbal Scale by trained psychometrists during the first two months of school in the 1963-1964 school year. The Verbal Scale correlates .89 with the WISC Full Scale and, therefore, is assumed to be a reasonably accurate estimate of the Full Scale (Wechsler, 1949).

The classroom grades for the Ss were recorded for the first two six-week grading periods for seven academic courses (reading, language,

literature, spelling, arithmetic, social studies, and elementary science). These letter grades were transformed into numerical values (A=4, B=3, C=2, D=1, F=0) and the average GPA for each six-week period was calculated. The mean of these two scores was then computed for each S which resulted in the mean GPA for the two grading periods.

For each of the 22 classrooms (omitting all combination classes) product-moment correlations were computed between the S's WISC Verbal IQ scores and the mean GPA's. From these correlation coefficients, regression equations were computed for each S to predict his GPA (GPA') on the basis of his WISC IQ score (Thorndike, 1963). If the GPA' were greater than .8 standard error of estimate above the S's mean GPA, the S was identified as an underachiever. This criterion was chosen to insure the selection of a representative sample of underachievers from each classroom. This method of identifying underachievers was repeated for each classroom. All those students not identified as underachievers were called achievers for the purpose of this investigation.

The total number of underachievers identified was 121. Within this group there were 86 males and 35 females. The IQs¹ of the underachievers ranged from 84 to 144 with a median IQ of 108. Because of the statistical method employed, different numbers of underachievers were identified for each classroom. The size of the groups ranged from two to nine for each classroom.

Instruments

In addition to the WISC-Verbal Scale all the fourth grade students were administered the California Test of Personality--Elementary Form AA (CTP) (Appendix A, p. 54) and a sociometric test (Appendix B, p. 58)

designed by Gronlund (1959) to measure peer relationships. These tests were administered during the third month of school. During the last month of school, parallel Form BB of the CTP and Gronlund's Sociometric Test were administered. In addition, the classroom grades for the seven academic subjects were collected for the last six-week grading period.

Procedure for Concomitants

Sample

In order to determine if there were significant differences between underachievers and achievers on measured peer relationships and personality variables, the following steps were taken.

A stratified random sample of Ss was drawn from the achiever group to provide a comparison group for the underachievers. This sample was chosen by randomly selecting as many male and female achievers as there were underachievers in each class. This method was employed to take into account the phenomenon of sex cleavage in peer relationships. Because of incomplete data on three of the underachievers, the two comparison groups each contained 34 females and 84 males.

Statistical Tests

Each section of Gronlund's Sociometric Test. (sit by, play with, and work with) was analyzed by using the Mann-Whitney U Test (Siegel, 1956) not corrected for ties. Comparisons were made between underachievers on each variable. Further comparisons were made by sex for each variable between underachievers and achievers.

The same two groups were employed for comparison on the CTP variables. However each variable of the test was analyzed separately. A 2 x 2 factorial analysis of variance design (Lindquist, 1953) was computed for each

variable which yielded information about the significance of the difference between achievers and underachievers, males and females, and the interaction effect.

Procedure for Treatment

Experimental Design

The underachievers identified in each of the 22 classrooms were randomly assigned (by classroom) to one of the five experimental conditions; individual counseling, group counseling, reading instruction, "Hawthorne-Effect", and control. Each treatment condition was composed of the underachievers identified in four classrooms except for the control which was composed of six.

The number of underachievers involved in the treatment conditions consisted of 79 males and 29 females. This number is less than the total number identified because some students had incomplete data or had moved out of the school district. Also, for administrative reasons, four classrooms which had more than six underachievers were reduced in size to six by randomly selecting Ss to be omitted for treatment purposes.

Definition of Treatments

Individual counseling was defined as a one-to-one relationship where by the counselor assisted the counselee to understand himself, his problems, and to help him find new ways of solving problems. The counselors employed Rogers' (1951) client-centered approach in the counseling sessions although, if necessary, structure and direction were given to the counseling relationship. The counselor was free to use play therapy or other kinds of techniques he felt would be of value to the client's growth. Such techniques as role playing school and family situations, drawing,

telling stories about pictures, and manual tasks such as building small objects were employed. The extent to which all of these techniques could be employed was determined by the facilities of each school. Therefore, it was not possible to employ all techniques in all schools.

The problem of underachievement was not emphasized as the focus of the counseling session. If this problem were introduced into the session, it was discussed with the clients to the extent of their interest. No attempt was made to force the student to talk about his school achievement.

Group counseling was defined as a process whereby the counselor worked with a group of students helping them talk about their problems and finding new ways of understanding themselves. This treatment was also based on the client-centered approach. The counselor was free to use appropriate techniques to implement the counseling process. Some of the techniques used were role playing school and home situations in a group setting, drawing on the blackboard, telling stories based on cut-out pictures, and writing stories about themselves and their interests.

Because of the group situation there was considerable "acting out" and "rough-housing" behavior. This type of behavior was allowed unless it interfered with the activities of another nearby group or class.

Reading instruction consisted of the use of the Science Research Associates Reading Laboratory Ila--Power Builders. This treatment was carried out in a group setting. Each student was given a pre test to determine his level of reading proficiency. This level constituted the base line from which the student began his reading instruction. Each student progressed to a more difficult level at his own rate. Emphasis

was made to maintain an individual improvement atmosphere rather than a competitive atmosphere among students.

The "Hawthorne-Effect" groups received no treatment except having records played to them and stories read to them. The students were relatively passive in the group situation. Any discussion that did take place was related to the materials presented to them. The actual materials used for this group consisted of the following three books and two records:

Books

A Book of Giant Stories
The Wonderful Flight to the Mushroom Planet
King of the Wind

Records

"The Wright Brothers--Pioneers of American Aviation"
"Riding the Pony Express"

The "Hawthorne-Effect" group served as a control for any changes which might occur in underachieving behavior due to the attention the students received (Borg, 1963, pp. 338-339).

The control group consisted of those students who remained in their classes and who did not participate in the treatments. The identity of these students was known only to the investigators.

Counselors

The counseling for this project was done by six professionally trained male counselors. These counselors had at least a master's degree and six semester hours of counseling practicum experience. Five of the counselors had completed a year-long counseling internship program as a requirement for the Ph.D. degree, and one was in the process of completing

this requirement. In addition, all the counselors received their training from the same counselor-education program, thereby giving them a common orientation to the counseling process.

The counselors were assigned at random to the treatment condition so that there were at least two different counselors involved in each treatment; however, some counselors participated in more than one treatment. The number of counselors actually involved in each treatment condition were: four for individual counseling, two for group counseling, four for reading instruction, and two for the "Hawthorne-Effect" treatment.

Treatment Duration

Each treatment group met with a counselor in a private room either individually (in the individual counseling treatment) or in groups (in the group counseling, reading instruction, and the "Hawthorne-Effect" treatment groups). The treatments were approximately a half hour in length for 14 sessions. For the first eight weeks there was one session per week and for the last three weeks there were two sessions per week.

Statistical Treatment

To assess the effects of the different treatments on changes in measured peer relationships the following steps were taken. The sociometric scores for each student in the treatment groups for the pre and post tests were divided by one less than the number of students in the classroom. The average pre test score was then subtracted from the average post test score to yield the amount of change in peer relationships for each student. This procedure was repeated for each of the three categories on the sociometric test.

These change scores were ranked from the greatest positive change (increased peer nominations) to the greatest negative change (decreased peer nominations) for the three categories. After the median of each ranking was determined, the extension of the median test was used to determine if any over-all significant changes occurred following the treatment (Siegel, 1956).

To determine if there were a possible sex difference with regard to the treatment effectiveness, the following procedures were employed. By using the rankings from the previous analysis, and categorizing them by sex, a Mann-Whitney U Test (Siegel, 1956) was computed. The rankings were then divided on the basis of high and low ability by using the median WISC IQ score of 108. The Mann-Whitney U Test was again employed to determine if ability differences were related to treatment effectiveness.

In order to determine if there were a significant relationship between the treatment conditions and change in GPA, the following steps were taken. The average GPA for the first two six-week grading periods was subtracted from the average GPA for the last six-week grading period to measure the amount of change that occurred. The average change for each treatment group was computed and these mean scores were analyzed by the groups-within-treatment design with the unweighted group mean as the unit of analysis (Lindquist, 1953). This design is based on the simple analysis of variance procedure for computation and provides an over-all F ratio to test the relative effectiveness of the treatments in altering GPA.

To answer the question regarding the relationship between sexes and change in GPA across treatment conditions the following methods were

used. A 2×5 factorial analysis of variance design was used with the subject as the unit of analysis.

In order to meet the assumption of proportionality, the number of scores in the treatment subgroups must be in the same proportion from row to row or from column to column of the design (Lindquist, 1953, p. 212). To accomplish this, nine of the scores were randomly selected to be excluded from the analysis. One score was deleted from the male reading instruction group and eight scores from the male control group thereby giving fourteen scores for each male treatment group.

In order to meet the assumption of proportionality for the female treatment groups it was necessary to add mean scores for certain groups. This procedure is acceptable if one degree of freedom is subtracted for each mean score added (Lindquist, 1953, p. 148).

To fulfill the requirement of proportionality, it was necessary to add six mean scores to the female treatment groups. Two scores were added to individual counseling, one score to the "Hawthorne-Effect" group, and three scores to the control group. With these alterations, there was a total of 89 degrees of freedom for the within mean squares. After these adjustments were made, there was a total of 14 scores in each male group or a combined total of 70 and a total of seven scores in each female group or a combined total of 35.

In order to answer the question regarding ability level and changes in GPA, another 2×5 analysis of variance design was used. High and low ability was again determined by those students falling above or below the median IQ of 108.

To meet the assumptions of proportionality, it was necessary to delete

21 scores: four from the high-ability "Hawthorne-Effect" group, ten from the high-ability control group, three from the low-ability group counseling group, and four from the low-ability reading instruction group. Three mean scores were added: two to the low-ability "Hawthorne-Effect" group and one to the low-ability control group.

After these changes were made, there was a total of eight scores in each high-ability group or a combined total of 40. For the low-ability group there was a total of ten scores in each treatment group or a combined total of 50. In accounting for the added scores, there was a total of 77 within degrees of freedom.

To assess the effectiveness of the treatment conditions on producing a change in measured personality variables, a groups-within-treatment design was used. The mean score on each personality variable for each classroom was computed and analyzed in the same manner as GPA.

Two 2×5 factorial analysis of variance designs were computed. One was to test for the relationship between ability level and changes in measured personality. The other was to test for the relationship between sex and personality change. In each case, the same number of scores were added or deleted from the treatment group as was done in the preceding analyses for GPA.

If an over-all F test reached the .05 level of significance, t tests were computed among means for that variable. The error term of the t ratio was based upon the method suggested by Lindquist (1953, p. 91) which employs the square root of the mean squares within divided by the sample size. When using this method, the degrees of freedom for the t test are the degrees of freedom for the mean squares within.

RESULTS

The results section is divided into two major areas: the findings concerning the concomitants of underachievement, and the findings pertaining to the treatment effectiveness.

Concomitants

The research questions pertaining to the concomitants of underachievement presented in the Introduction are restated and answered in the following section.

Question One

Is there a significant difference between measured peer relationships of underachievers and achievers?

In answering this question Gronlund's Sociometric Test was used. The questions dealt with whom the children would like to sit by, work with, and play with (Appendix B, p. 58).

Table 1 (p. 59) presents the results of the Mann-Whitney U analyses. From Table 1 it can be seen that achievers were nominated by their peers more often than were underachievers for all three categories. All the differences were significant at the .001 level. It was concluded that there was a significant difference between achievers and underachievers in terms of peer relationships with achievers being nominated more frequently.

Question Two

Is there a significant difference between measured peer relationships of underachievers and achievers when analyzed by sex?

The results of the peer relationship comparison of achievers and underachievers within each sex are presented in Table 1 (p. 59). To test for differences the Mann-Whitney U Test was employed.

When analyzed independently for each sex, the achievers were nominated by their peers more often than were the underachievers. These differences were significant at the .001 level for all three sociometric categories.

From the results of these analyses, it was concluded that within each sex there was a significant difference in peer relationships between achievers and underachievers with achievers being chosen more frequently.

Question Three

Is there a significant difference between measured personality variables of underachievers and achievers?

To answer this question a 2 x 2 analysis of variance was computed for each variable of the CTP. The results of these analyses are found in Table 3 (p. 62).

It may be noted that the achievers scored higher, or towards better adjustment, on all CTP scales. One scale, Self-Reliance, differentiated between the groups at the .05 level of significance. Four scales: Freedom from Withdrawing Tendencies, Social Skills, Anti-Social Tendencies, and Family Relations, differentiated between the groups at the .01 level of significance. Eight scales, including Sense of Personal Worth, Feeling of Belonging, Freedom from Nervous Symptoms, Social Standards, School

Relations, Community Relations, Sense of Personal Feeling, and Social Adjustment, Differentiated between the groups at the .001 level of significance.

The analyses of the scales of Personal Adjustment and Total Adjustment resulted in significant interactions and, therefore, the cell mean differences were not accurately reflected in the main effects. For this reason the cell means for each scale were compared for significant differences.

Four comparisons were made for each scale: male achievers vs. male underachievers, female achievers vs. female underachievers, male achievers vs. female achievers, and male underachievers vs. female underachievers. Table 4 (p. 63) presents the results of the t comparisons. It is noted that on both variables the achievers were significantly different from the underachievers for each sex at the .001 level. These differences were in the direction of better adjustment for the achievers. No significant differences were found between sexes within either the achiever or under-achiever groups.

The means and standard deviations of the four groups for each CTP variable are found in Table 2 (p. 60).

On the basis of the 2 x 2 analyses of variance, it was concluded that there were significant differences between underachievers and achievers on measured personality variables. The achievers scored higher or towards better adjustment on all variables of the CTP including those variables with significant interaction.

Question Four

Is there a significant difference between measured personality variables of underachievers and achievers when analyzed by sex?

To answer this question the three variables with significant main effects (Table 3) were analyzed for differences in cell means. These variables were Social Standards, Family Relations, and Social Adjustment. For each variable the comparisons male achiever vs. female achiever and male underachiever vs. female underachiever were made. Table 5 (p. 64) presents the results of the t analyses.

On all three variables the female achievers scored significantly higher, or towards better adjustment, than the male achievers. No differences existed between the sexes for the underachiever group.

On the basis of these results, it was concluded that there were significant differences between males and females of the achieving group on certain measured personality variables. No differences existed between males and females of the underachieving group.

Treatment Effects

The research questions pertaining to the treatment of underachievers presented in the Introduction are restated and answered in the following section. It should be noted that all following comparisons involve underachievers and not achievers.

Question Five

Is there a significant relationship between the treatment conditions and change in peer relationships?

To answer this question the extension of the median test (Siegel, 1956) was employed to test the changes in peer nominations following treatment. Table 6 (p. 65) presents the results of these analyses including the observed frequencies of Ss falling above or below the overall median of peer nominations for each treatment.

From Table 6 it can be noted that there were no significant differences between the treatment groups in terms of change in peer relationships on the items sit by, work with, and play with. There was no differential effect among treatments in producing change in peer relationships of underachievers.

On the basis of these results, it was concluded that there was no significant relationship between the treatment conditions and change in peer relationships.

Question Six

Is there a significant relationship between the treatment conditions and change in peer relationships when analyzed by sex?

To answer this question the Mann-Whitney U Test was employed to determine whether either sex made a significant gain in peer acceptance. Table 7 (p. 66) presents the results of these analyses.

From Table 7 it can be noted that on the question of whom they would like to sit by there was a significant difference between the sexes. Males had a mean increase of .011 peer nominations while females had a mean decrease of .026. This difference was significant at the .05 level.

There were no significant differences found between males and females on the items of whom they would like to work with, and whom they would like to play with. There was a difference on the item whom they would like to sit by. Based on this result it was concluded that there was a significant relationship between the treatment conditions and change in peer relationships when analyzed by sex.

Question Seven

Is there a significant relationship between the treatment conditions and change in peer relationships when analyzed by ability level?

The Mann-Whitney U Test was employed to test whether ability level was related to change in the number of peer nominations following treatment.

As seen in Table 7 (p. 66) the Mann-Whitney U Test resulted in no significant differences between the ability levels and change in number of peer nominations. It was concluded that there was no significant relationship between the treatment conditions and change in peer relationships when analyzed by ability level.

Question Eight

Is there a significant relationship between the treatment conditions and change in grade point average?

To answer this question concerning the relationship between the treatment conditions and change in GPA, a groups-within-treatment analysis of variance design was employed. Table 8 (p. 67) presents the results of the analysis.

From Table 8 it can be seen that no treatment was more effective than another treatment in changing the students' achievement level.

Therefore, it was concluded that there was no significant relationship between the treatment conditions and change in GPA.

Question Nine

Is there a significant relationship between the treatment conditions and change in grade point average when analyzed by sex?

To determine whether differences existed between the sexes in terms of change in GPA, a 2 x 5 analysis of variance was computed. Table 9 (p. 68) gives the mean GPA change for each sex within each treatment condition. Table 10 (p. 69) presents the results of the analysis of variance.

It can be noted from Table 10 that a significant F ratio was obtained between males and females. Therefore, to determine where the significant differences existed within the treatment conditions, t tests were computed. Table 11 (p. 70) presents the results of these comparisons.

From Table 11 it can be seen that a significant difference existed between males and females in the group counseling treatment condition. This difference was attributable to an increase in GPA for the males and a decrease in GPA for the females.

On the basis of this result, it was concluded that there was a significant difference between males and females in terms of change in GPA for the group counseling treatment condition.

Question Ten

Is there a significant relationship between the treatment conditions and change in grade point average when analyzed by ability level?

To determine whether there were significant differences between high ability and low ability subjects, a 2×5 analysis of variance design was employed. Table 12 (p. 71) gives the mean GPA change for the two ability groups for each treatment condition. Table 13 (p. 72) presents the results of the analysis of variance. Based on the results found in Table 13, it was concluded that there were no differences between ability groups in terms of change in GPA.

Question Eleven

Is there a significant relationship between the treatment conditions and change in measured personality variables?

A groups-within-treatment analysis of variance design was employed to determine whether differences existed between the treatment groups on change in personality variables as measured by CTP. Results of these

analyses are found in Table 14 (p. 73).

Of the fifteen variables of the CTP, one scale was found to be significant. The analysis of the Social Standards Scale resulted in a significant F ratio. On the basis of the significant F ratio, t tests were computed among treatment groups. Table 15 (p. 75) shows the results of these analyses. It was found that students who received group counseling had a significantly greater positive change on the Social Standards Scale than did the control group, the individual counseling group, and reading instruction group.

On the basis of these results, it was concluded that on the personality variable of Social Standards there was a relationship between change and treatment conditions.

Question Twelve

Is there a significant relationship between the treatment conditions and change in measured personality variables when analyzed by sex?

To answer this question a 2×5 analysis of variance was computed. Table 16 (p. 76) presents the means and standard deviations for each variable of the CTP and Table 17 (p. 79) presents the F ratios for each variable.

From Table 17 it is noted that there was a sex difference on the variables of Sense of Personal Worth and Total Adjustment. The variable Freedom from Withdrawing Tendencies resulted in a significant interaction.

To determine where the significant differences existed, the cell mean between sexes within each treatment was compared. Table 18 (p. 80) presents the results of these t analyses. For the variables of Sense of Personal Worth and Freedom from Withdrawing Tendencies, the only significant difference between sexes was found in the control group.

On the Total Adjustment variable, there was a significant difference between males and females within the group counseling treatment condition showing males better adjusted.

Question Thirteen

Is there a significant relationship between the treatment conditions and change in measured personality variables when analyzed by ability level?

To determine if differences existed between high and low ability groups on the personality variables, a 2×5 analysis of variance was computed for each variable. Table 19 (p. 81) presents the means and standard deviations and Table 20 (p. 84) presents the F ratios.

From Table 20 it can be noted that on the variable of Social Standards an over-all significant difference existed between the ability groups. To determine where the significant differences were, t tests were computed between high and low ability groups within each treatment. Table 21 (p. 85) presents the results of these analyses.

It was found that within each treatment condition there were no significant differences between ability groups. Therefore, the over-all significant difference can be attributed to ability differences among different treatment conditions rather than between ability groups within the same treatment condition.

It was concluded that there were no significant differences between high and low ability groups and change in measured personality variables when analyzed within each treatment condition.

DISCUSSION

The results of this investigation are partially in agreement with previous findings although some results are unique to this study.

Findings Consistent with Previous Research

Previous findings by Kurtz and Swenson (1951) and Barrett (1957) were substantiated indicating that underachievers were less accepted by their peers than achievers.

The change in number of peer nominations between achievers and under-achievers was quite marked for all three categories of the sociometric test. This would indicate that the peers of underachievers tend to have an over-all attitude towards underachievers that affects their relationship with them. Therefore, it was more than not choosing to work with underachievers, but also not choosing to sit by them or play with them. It is highly probable that if more and different kinds of relationships were included in a sociometric evaluation this same attitude would prevail.

The same phenomenon of not being selected as often held true when underachievers and achievers were compared within each sex. This indicates that there is no differential attitude towards either sex by the peers of underachieving students.

Although the cause of this finding is not apparent, it might be hypothesized that the difficulty of relating with peers intensifies the

underachiever's problems. Or, on the other hand, underachievement might contribute to the difficulty in relating with peers.

The difference between underachievers and achievers in terms of personality variables was also in agreement with previous empirical findings of Passow and Goldberg (1958), Drake (1962), and Roberts (1962). It was noted that the achieving group scored significantly higher or towards better adjustment on all CTP scales. As in previous research, this finding further suggests that underachievement is more than a surface phenomenon but involves the global personality of the student. As in the case of peer relations, there were no significant differences between male and female underachievers which indicated there was no reliable difference in their level of personal adjustment. Both groups scored equally low on the CTP.

Inadequate personality adjustment, in conjunction with the underachievers' poor peer relations, suggests that the underachiever has certain psychological problems that conflict with gaining a satisfactory learning experience in the classroom.

Another finding which was consistent with previous results was that more male underachievers were identified than females. The ratio of males to females identified as underachievers was over 3:1. This type of result has been typical of studies dealing with underachievers. Shaw (1961) has stated that one of the most universally agreed upon characteristics of underachievement is that it is a predominantly male problem. However, it should be noted that even though more underachievers are males, those females identified have the same inadequate measured personality adjustment and lack of positive peer relationships as do male underachievers.

The results of this investigation demonstrated that those concomitants of underachievement that have been found at the secondary and college levels are also observed in underachievers at the elementary school level. This further suggests that the pattern associated with underachievement is fairly well determined by the fourth grade level and as previous research has found tends to persist as the student continues his schooling.

It is also interesting to note that these somewhat consistent findings have been obtained in spite of the fact that different operational definitions have been employed to define underachievement. This indicates that there is at least some commonality among these various research definitions. However, it is still in the best interest of further research to employ an acceptable definition which would hopefully become the standard operational definition of underachievement (Farquhar and Payne, 1964).

The results presented about the effectiveness of the various counseling and guidance treatments in altering peer relations, GPA, and measured personality variables do not demonstrate that these factors associated with underachievement are easily modified. This is in agreement with the findings of Shaw and Grubb (1958).

Unique Findings

One unique finding was observed which indicated that males reacted differently to the treatment conditions than females. The results indicated that males tended to make positive changes in the direction of improvement and females tended to make negative changes in the opposite direction.

These changes were noted on the category "sit by" of Gronlund's

sociometric test, GPA, and the Social Standard and Total Adjustment scales of the CTP. It was also established that these changes on the CTP and GPA were due specifically to significant differences with the group counseling treatment.

These results are puzzling and certainly merit investigation to determine the actual causes for such findings. It might be hypothesized that the type of acting-out behavior which occurred in the group counseling treatment was therapeutic for males but had an adverse effect on the females. This possibility could have been enhanced due to the fact that males outnumbered the females in three of the four groups, thereby making the groups' interests and concerns more masculine than feminine.

The scores of one treatment group on the Social Standards scale of the CTP was found to have changed in the positive direction significantly more than the control group following treatments. This change was associated with group counseling and suggests that on the basis of the items these students had learned to recognize desirable social standards and had come to understand the rights of others.

Limitations of the Study

The apparent lack of effectiveness of the counseling and guidance treatments in facilitating a global change in the underachievers may be partially explained in terms of some of the limitations involved in the study.

Almost all of the students who participated in the treatments were exposed for the first time to a counseling interview situation. It was a common observation among the counselors that these students had

difficulty in perceiving their role and numerous attempts had to be made to restructure the role they should play.

It was also noted that the students did not perceive their under-achieving behavior as a problem that needed correction. Although the students enjoyed the counseling sessions, this interest did not stem from a satisfaction resulting from solving any personal problems. This apparent lack of concern on their part did not aid in the facilitation of the counseling relationship.

Ohlsen (1964) noted similar problems when working with bright under-achieving fifth and sixth graders. He suggested that a number of modifications be made so that a more desirable outcome could be realized. Some of the suggestions were that underachievers be placed in counseling groups in which there are other pupils who are genuinely concerned about improving their school achievement, fewer clients be treated in a group (four or five instead of eight), clients need more limits especially during the early stages of counseling, and more attention be given to selecting a room with the fewest possible distractions.

Another limitation of the study was the lack of specific training and experience of the counselors in the area of elementary school counseling. It is possible that different approaches are required for working with elementary school children to provide more positive experiences for them.

In addition, the actual amount of time spent by the counselors in working with the underachievers was limited compared to the amount of time spent by the children in the environments of the classroom and the home. It might be hypothesized that the factors operating to make a

child an underachiever cannot be overcome in such a short period of time with the techniques employed in this study.

It also should be noted that the .8 standard error of estimate criterion of underachievement employed in this study selected some students who might have been identified as underachievers by chance rather than because of any real underachievement problem. The use of these students might have caused some confounding effect in the treatments.

Suggestions for Further Research

Further research in the area of counseling and guidance for underachieving elementary students needs to be focused in several areas.

Research is needed to establish whether counselors trained specifically for elementary school counseling are able to produce more positive results when working with underachieving children than counselors trained to work with secondary school and college students.

An attempt is also needed to evaluate the effectiveness of counseling in elementary schools that have organized guidance programs which involve the participation of teachers. The whole school would understand the purpose of counseling and the expectations of what could be accomplished would be established. In this environment it seems likely that the children would perceive counselors and counseling as an integral part of the school and be more receptive to such experience.

Ideally a research program should encompass a global assault on the problem of underachievement. This program should attempt to deal with the most important aspects of the underachiever's life. In addition to counseling with the underachiever, it would seem advisable to include consultations and group counseling with parents and teachers. The

underachiever should also be provided with remedial aid for any special problem he might have such as reading, study habits, etc.

If this global approach were to prove successful, it would be possible to determine through further research which of the individual treatments accomplished the most positive change.

SUMMARY

The problem of scholastic underachievement has been a major concern to American educators for a number of years. Many empirical attempts have been made to identify factors related to underachievement and to help underachieving students improve their academic performance and personal adjustment at the secondary and college levels.

Previous research has demonstrated that underachievement is present at the elementary school level. Yet, practically no empirical findings have been reported concerning the modification of this behavior at this level. Therefore, the purpose of this study was to identify certain concomitants of underachievement at the elementary school level and to attempt to modify this behavior by using selected guidance techniques.

In the attempt to identify certain concomitants of underachievement, the following questions were answered based on pre-treatment analyses comparing underachievers and achievers:

Research Questions

1. Is there a significant difference between measured peer relationships of underachievers and achievers?
2. Is there a significant difference between measured peer relationships of underachievers and achievers when analyzed by sex?
3. Is there a significant difference between measured personality variables of underachievers and achievers?

4. Is there a significant difference between measured personality variables of underachievers and achievers when analyzed by sex?

To evaluate the effectiveness of the treatment conditions in modifying the behavior of underachievers, the following questions were answered:

5. Is there a significant relationship between the treatment conditions and change in peer relationships?
6. Is there a significant relationship between the treatment conditions and change in peer relationships when analyzed by sex?
7. Is there a significant relationship between the treatment conditions and change in peer relationships when analyzed by ability level?
8. Is there a significant relationship between the treatment conditions and change in grade point average?
9. Is there a significant relationship between the treatment conditions and change in grade point average when analyzed by sex?
10. Is there a significant relationship between the treatment conditions and change in grade point average when analyzed by ability level?
11. Is there a significant relationship between the treatment conditions and change in measured personality variables?
12. Is there a significant relationship between the treatment conditions and change in measured personality variables when analyzed by sex?
13. Is there a significant relationship between the treatment conditions and change in measured personality variables when analyzed

by ability level?

Procedure

Sample

The Ss employed in this investigation consisted of all fourth grade students in the public school system of Grand Forks, North Dakota. The total number of fourth grade students was approximately 700 and the number of classrooms involved in the study was 22.

Identification of Underachievers

All Ss were administered the Wechsler Intelligence Scale for Children (WISC) Verbal Scale during the first two months of the school year. The class grades were averaged for the first and second six-week grading periods in seven academic subjects (reading, language, literature, spelling, arithmetic, social studies, and elementary science) for each student. Using the WISC IQ score and the mean grade point average (GPA), product-moment correlations were independently computed for each classroom. From these correlations a regression equation was computed for each S to predict his GPA. If the predicted GPA were greater than .8 standard error of estimate above the S's mean obtained GPA, the S was identified as an underachiever. This procedure was followed for each classroom and resulted in the identification of 121 underachievers of which 86 were males and 35 females. The number of underachievers identified in each classroom ranged from two to nine students.

Instruments

In addition to the WISC-Verbal Scale all the fourth grade students were administered the California Test of Personality (CTP) and Gronlund's Sociometric Test designed to measure peer relationships. These tests were

administered during the third month of school. During the last month of school parallel Form BB of the CTP and Gronlund's Sociometric Test were administered. In addition, the classroom grades for the seven academic subjects were collected for the last six-week grading period of the second semester.

Procedure for Concomitants

Sample

A stratified random sample of Ss was drawn from the achiever group (those students not identified as underachievers) to provide a comparison group for the underachievers on the sociometric data. This sample was chosen by randomly selecting as many male and female achievers as there were underachievers in each class. To provide a comparison group for the personality data, a group with twice as many subjects was randomly selected from the achiever group.

Statistical Tests

Each section of Gronlund's Sociometric Test (sit by, play with, and work with) was analyzed by using the Mann-Whitney U Test. To analyze the CTP, fifteen 2 x 2 analysis of variance designs were employed to test for differences between achievers and underachievers.

Procedure for Treatments

Experimental Design

The underachievers identified in each of the 22 classrooms were randomly assigned (by classroom) to one of the five experimental conditions: individual counseling, group counseling, reading instruction, "Hawthorne-Effect" and control. Each treatment condition was composed of the underachievers identified in four classrooms except for the

control which was composed of six.

Definition of Treatments

The individual and group counseling sessions were based on a non-directive approach with the use of appropriate play therapy techniques. The reading instruction was based on the SRA Ila Reading Laboratory. The "Hawthorne-Effect" control group involved the use of children's fictional books and musical records. The control group consisted of those students who remained in their classes and who did not participate in the treatments.

Counselors

The counseling for this project was done by six professionally trained male counselors. These counselors had at least a master's degree and six semester hours of counseling practicum experience. The counselors were assigned at random to the treatment conditions so that there were at least two different counselors involved in each treatment; however, some counselors participated in more than one treatment. Each counselor met with his treatment group for approximately a half hour for 14 sessions. For the first eight weeks of treatments there was one session per week and for the last three weeks there were two sessions per week.

Statistical Treatment

To assess the effects of the different treatments on changes in measured peer relationships following treatments, the extension of the median test was used. To determine if there were a possible sex difference in regards to the treatment effectiveness a Mann-Whitney U Test was employed.

To ascertain if there were significant relationships between the

treatment conditions and changes in GPA and CTP variables, the scores were analyzed by a groups-within-treatment design. To determine if there were possible sex and ability differences in regards to the treatment effectiveness factorial analysis of variance designs were used.

Results

The majority of significant findings involved differences between achievers and underachievers although several differences were noted on the post treatment analyses. The following is a listing of all significant findings of the investigation:

Concomitants

1. Achievers were nominated on a sociometric test significantly more often than were underachievers.
2. Within each sex, achievers were nominated on a sociometric test significantly more often than were underachievers.
3. On all variables of the CTP underachievers scored lower or towards poorer adjustment than did achievers.
4. On the CTP scales of Social Standards, Family Relations, and Social Adjustment, female achievers scored significantly higher or towards better adjustment than did male achievers. No difference existed between the sexes for the underachieving group.

Treatment Effects

5. On the sociometric section of whom they would like to sit by, males increased in average number of peer nominations while females decreased. Therefore, a difference existed between the sexes following treatment in terms of peer relationships.
6. Within the group counseling treatment condition a significant

difference existed between males and females in terms of change in GPA. This difference was attributable to an increase for males and a decrease for females.

7. On the CTP Scale of Social Standards the group counseling Ss improved significantly more than the control, individual counseling and reading instruction groups.
8. On the CTP Scale of Total Adjustment there was a significant difference between males and females within the group counseling treatment condition with the males showing better adjustment.
9. A greater number of male underachievers was identified as compared to female underachievers with the ratio being greater than 3:1.

Discussion

Certain of these findings were in agreement with the findings of previous investigations. It would seem that underachievers have greater difficulty relating to their peers. This difficulty was reflected in their being chosen significantly less often than achievers.

The difference between achievers and underachievers was also reflected in the gross difference on the CTP. The achievers scored higher or towards better adjustment on all scales of this test. As suggested in previous investigations, this finding would seem to substantiate that underachievement is often not a surface or situational problem but rather involves the global personality of the student. If treatment is to be more effective, it would seem important to increase the number of contact hours between counselor and client so that more intensive counseling could be utilized.

The finding that a greater proportion of males was identified as underachievers concurs with previous observations that the phenomenon of underachievement is basically a male problem.

A somewhat unique finding was the consistent difference between males and females within the group counseling treatment condition. It is difficult to hypothesize why males generally reacted positively and females negatively. It is possible that the type of acting-out behavior which occurred was therapeutic for males but not for females.

Conclusions

The following major conclusions of the study were drawn based on the obtained results:

1. Achievers have more positive peer relationships than do underachievers.
2. Achievers tend to be better adjusted than underachievers.
3. The above mentioned differences between achievers and underachievers in terms of peer relations and personality variables are valid regardless of sex.
4. Males reacted positively to group counseling while females reacted negatively on the criteria of improvement in GPA and certain CTP scales.
5. Underachievement is predominantly a male problem with the ratio of males to females greater than 3:1.

Limitations

There were several limitations which might have contributed to the apparent lack of effectiveness in modifying underachieving behavior.

The counselors employed in the study had received the majority of

their training for secondary school and college level work. It is possible that different approaches are required for working with elementary school children to provide more positive experiences for them.

Another limitation of the study was the limited number of counseling sessions employed. If underachievement is an aspect of the total personality adjustment of the student, it would seem appropriate to allow for more contact hours when attempting to modify this behavior.

Finally, the use of .8 standard error of estimate as the operational definition of underachievement allowed some students to be identified as underachievers on the basis of chance. The use of these students might have caused some confounding effect in the treatments.

Suggestions for Further Research

Further research in the area of counseling and guidance for underachieving elementary students needs to be focused in several areas.

Research is needed to establish whether counselors trained specifically for elementary school counseling are able to produce more positive results when working with underachieving children than counselors trained to work with secondary school and college students.

An attempt is also needed to evaluate the effectiveness of counseling elementary schools that have organized guidance programs. The whole school would understand the purpose of counseling and the expectations of what could be accomplished would be established.

Ideally a research program should encompass a global assault on the problem of underachievement. This program should attempt to deal with the most important aspects of the underachiever's life. In addition to counseling with the underachiever, it would seem advisable to include

consultations and group counseling with parents and teachers. The under-achiever should also be provided with remedial aid for any special problem he might have such as reading, study habits, etc.

If this global approach were to prove successful it would be possible to determine through further research which of the individual treatments accomplished the most positive change.

APPENDIX A

Description of CTP Scales

SELF-RELIANCE--An individual may be said to be self-reliant when his overt actions indicate that he can do things independently of others, depend upon himself in various situations, and direct his own activities. The self-reliant person is also characteristically stable emotionally and responsible in his behavior.

SENSE OF PERSONAL WORTH--An individual possesses a sense of being worthy when he feels he is well regarded by others, when he feels that others have faith in his future success, and when he believes that he has average ability. To feel worthy means to feel capable and reasonably attractive.

SENSE OF PERSONAL FREEDOM--An individual enjoys a sense of freedom when he is permitted to have a reasonable share in the determination of his conduct and in setting the general policies that shall govern his life. Desirable freedom includes permission to choose one's own friends and to have at least a little spending money.

FEELING OF BELONGING--An individual feels that he belongs when he enjoys the love of his family, the well-wishes of good friends, and a cordial relationship with people in general. Such a person will as a rule get along well with his teachers or employers and usually feels proud of his school or place of business.

WITHDRAWING TENDENCIES--The individual who is said to withdraw is the one who substitutes the joys of a fantasy world for actual successes in real life. Such a person is characteristically sensitive, lonely, and

given to self-concern. Normal adjustment is characterized by reasonable freedom from these tendencies.

NERVOUS SYMPTOMS--The individual who is classified as having nervous symptoms is the one who suffers from one or more of a variety of physical symptoms such as loss of appetite, frequent eye strain, inability to sleep, or a tendency to be chronically tired. People of this kind may be exhibiting physical expressions of emotional conflicts.

PERSONAL ADJUSTMENT--A composite score of Self-Reliance, Sense of Personal Worth, Sense of Personal Freedom, Feeling of Belonging, Withdrawing Tendencies, and Nervous Symptoms.

SOCIAL STANDARDS--The individual who recognizes desirable social standards is the one who has come to understand the rights of others and who appreciates the necessity of subordinating certain desires to the needs of the group. Such an individual understands what is regarded as being right or wrong.

SOCIAL SKILLS--An individual may be said to be socially skillful or effective when he shows a liking for people, when he inconveniences himself to be of assistance to them, and when he is diplomatic in his dealings with both friends and strangers. The socially skillful person subordinates his or her egoistic tendencies in favor of interest in the problems and activities of his associates.

ANTI-SOCIAL TENDENCIES--An individual would normally be regarded as anti-social when he is given to bullying, frequent quarreling, disobedience, and destructiveness to property. The anti-social person is the one who endeavors to get his satisfactions in ways that are damaging and unfair to others. Normal adjustment is characterized by reasonable freedom

from these tendencies.

FAMILY RELATIONS--The individual who exhibits desirable family relationships is the one who feels that he is loved and well-treated at home, and who has a sense of security and self-respect in connection with the various members of his family. Superior family relations also include parental control that is neither too strict nor too lenient.

SCHOOL RELATIONS--The student who is satisfactorily adjusted to his school is the one who feels that his teachers like him, who enjoys being with other students, and who finds the school work adapted to his level of interest and maturity. Good school relations involve the feeling on the part of the student that he counts for something in the life of the institution.

OCCUPATION RELATIONS--On the adult level of the test only, the above component (School Relations) is called Occupation Relations and is defined thus: An individual has desirable vocational relations or adjustment when he is happy in his job because he is assigned to work which fits his capacities and interests; also, when he has developed interest, sense of worth, and efficiency in a job previously deemed uncongenial. He feels that his contribution is important and essential.

COMMUNITY RELATIONS--The individual who may be said to be making good adjustments in his community is the one who mingles happily with his neighbors, who takes pride in community improvements, and who is tolerant in dealing with both strangers and foreigners. Satisfactory community relations include as well the disposition to be respectful of laws and of regulations pertaining to the general welfare.

SOCIAL ADJUSTMENT--A composite score of Social Standards, Social

Skills, Anti-Social Tendencies, Family Relations, School Relations, Occupation Relations, and Community Relations.

TOTAL ADJUSTMENT--A composite score of Personal Adjustment and Social Adjustment.

APPENDIX B

Gronlund's Sociometric Test

NAME _____ DATE _____
SCHOOL _____ CLASS _____

We would like to know the names of the children you would like to have sit near you, to have work with you and to have play with you. You may choose anyone in this room you wish, including those students who are absent. Your choices will not be seen by anyone else. Give first name and initial of the last name.

REMEMBER!

1. Your choices must be from pupils in this room, including those who are absent.
2. You should give the first name and the initial of the last name.
3. You should make all five choices for each question.
4. You may choose a pupil for more than one group if you wish.
5. Your choices will not be seen by anyone else.

I would choose to sit near these children:

1. _____
2. _____
3. _____
4. _____
5. _____

I would choose to work with these children:

1. _____
2. _____
3. _____
4. _____
5. _____

I would choose to play with these children:

1. _____
2. _____
3. _____
4. _____
5. _____

APPENDIX C

Table 1

MANN-WHITNEY U TESTS FOR SOCIOMETRIC TEST RESULTS
BASED ON PRE-TREATMENT ANALYSES

Comparisons	Average Number of Nominations	U
Sit By		
UA ^a vs. A ^b	2.899 vs. 6.033	7.186*
Female UA vs. Female A	2.352 vs. 5.970	3.895*
Male UA vs. Male A	3.154 vs. 6.059	6.248*
Work With		
UA vs. A	3.084 vs. 6.313	6.461*
Female UA vs. Female A	2.647 vs. 6.500	3.730*
Male UA vs. Male A	3.261 vs. 6.238	5.630*
Play With		
UA vs. A	3.432 vs. 5.974	6.391*
Female UA vs. Female A	2.941 vs. 5.970	3.994*
Male UA vs. Male A	3.630 vs. 5.976	5.343*

*Significant at the .001 level

^aUnderachievers N=118, 84 males, 34 females

^bAchievers N=118, 84 males, 34 females

Table 2

PRE-TREATMENT MEANS AND STANDARD DEVIATIONS OF CALIFORNIA TEST OF PERSONALITY
VARIABLES WHEN COMPARED BY SEX

Variable	Ach. Male N=168		Underach. Male N=84		Ach. Female N=68		Underach. Female N=34	
	M	SD	M	SD	M	SD	M	SD
Self-Reliance	7.51	1.74	7.04	1.74	7.88	1.64	7.44	1.63
Sense of Personal Worth	8.47	2.03	7.76	2.24	8.73	2.14	7.73	1.94
Sense of Personal Freedom	8.79	2.24	7.88	2.74	9.36	1.79	7.47	2.06
Feeling of Belonging	9.83	2.02	9.11	2.26	10.07	1.60	8.41	2.18
Freedom from Withdrawing Tendencies	7.64	2.76	7.11	2.78	7.51	2.74	5.73	2.41
Freedom from Nervous Symptoms	8.07	2.63	7.11	2.62	7.92	3.15	5.73	2.46

Table 2 Continued on Next Page

Table 2 Continued

PRE-TREATMENT MEANS AND STANDARD DEVIATIONS OF CALIFORNIA TEST OF PERSONALITY
VARIABLES WHEN COMPARED BY SEX

Variable	Ach. Male N=168		Underach. Male N=84		Ach. Female N=68		Underach. Female N=34	
	M	SD	M	SD	M	SD	M	SD
Personal Adjustment	50.35	9.33	46.04	10.54	51.50	8.45	42.52	7.81
Social Standards	10.02	1.62	9.66	1.92	10.72	1.14	9.79	1.72
Social Skills	8.95	1.94	8.55	2.10	9.58	1.69	8.26	2.09
Freedom from Anti- Social Tendencies	8.25	2.43	7.73	2.29	8.91	2.29	7.32	2.36
Family Relations	9.17	2.38	8.58	2.62	10.08	1.76	9.14	2.31
School Relations	8.97	2.08	7.97	2.66	9.44	2.19	7.52	2.51
Community Relations	9.69	1.50	8.98	1.70	10.02	1.40	8.88	1.92
Social Adjustment	55.25	8.30	51.51	9.47	58.77	7.25	51.05	8.56
Total Adjustment	105.60	16.39	97.55	18.39	110.25	14.64	93.58	13.45

Table 3

PRE-TREATMENT RESULTS OF FIFTEEN 2 X 2 ANALYSIS OF VARIANCE DESIGNS
FOR THE CALIFORNIA TEST OF PERSONALITY WHEN COMPARED BY SEX

Variable	F (A/UA) ^a df 1/350	F (M/F) ^b df 1/350	F (Ach./Sex) df 1/350
Self-Reliance	5.630*	3.411	.004
Sense of Personal Worth	11.089***	.459	.308
Sense of Personal Freedom	21.468***	.815	2.943
Feeling of Belonging	18.536***	.110	3.428
Freedom from Withdrawing Tendencies	8.243**	2.914	3.335
Freedom from Nervous Symptoms	18.077***	3.053	3.266
Personal Adjustment	28.428***	.136	3.981*
Social Standards	12.398***	3.963*	.884
Social Skills	8.928**	2.000	3.630
Freedom from Anti-Social Tendencies	9.450**	1.142	3.252
Family Relations	6.798**	8.383**	.362
School Relations	23.487***	.353	2.512
Community Relations	21.752***	1.004	1.233
Social Adjustment	26.131***	4.873*	3.544
Total Adjustment	32.359***	.845	4.442*

*Significant at the .05 level

**Significant at the .01 level

***Significant at the .001 level

^aA=Achiever; UA=Underachievers

^bM=Male; F=Female

Table 4

PRE-TREATMENT RESULTS OF t TESTS OF PERSONAL ADJUSTMENT AND
TOTAL ADJUSTMENT SCORES WHEN COMPARED BY SEX

	M	M	D_M	df	t
Personal Adjustment					
Male A ^a vs. Male UA ^b	50.35	46.04	4.31	350	3.42*
Female A vs. Female UA	51.50	42.52	8.98	350	4.56*
Male A vs. Female A	50.35	51.50	1.15	350	.83
Male UA vs. Female UA	46.04	42.52	3.52	350	1.85
Total Adjustment					
Male A vs. Male UA	105.60	97.55	8.05	350	3.66*
Female A vs. Female UA	110.25	93.58	16.67	350	4.85*
Male A vs. Female A	105.60	110.25	4.65	350	1.95
Male UA vs. Female UA	97.55	93.58	3.97	350	1.20

*Significant at the .001 level
^aA=Achievers
^bUA=Underachievers

Table 5
 PRE-TREATMENT RESULTS OF $\bar{x}$ TESTS OF SOCIAL STANDARDS,
 FAMILY RELATIONS, AND SOCIAL ADJUSTMENT SCORES
 WHEN COMPARED BY SEX

Variable	Comparisons	Means	df	$\bar{x}$
Social Standards	Male Ach. vs. Female Ach.	10.20 vs. 10.72	350	2.166*
Social Standards	Male Underach. vs. Female Underach.	9.79 vs. 9.66	350	.393
Family Relations	Male Ach. vs. Female Ach.	9.17 vs. 10.08	350	2.676**
Family Relations	Male Underach. vs. Female Underach.	8.58 vs. 9.14	350	1.166
Social Adjustment	Male Ach. vs. Female Ach.	55.25 vs. 58.77	350	2.862**
Social Adjustment	Male Underach. vs. Female Underach.	51.51 vs. 51.05	350	.286

*Significant at the .05 level

**Significant at the .01 level

Table 6
EXTENSION OF THE MEDIAN TEST ANALYSES FOR CHANGES IN SOCIOMETRIC TEST RESULTS FOLLOWING TREATMENTS

Observed Frequencies Above and Below the Median						Chi Square
Ind	Grp	Read	Hawth	Control		
Sit By						
Above Median	10	5	11	11	15	3.198
Below Median	9	14	11	9	11	
Work With						
Above Median	11	10	13	9	16	2.834
Below Median	8	11	9	11	10	
Play With						
Above Median	8	11	11	12	18	5.164
Below Median	11	10	11	8	8	

Table 7

MANN-WHITNEY U ANALYSES FOR CHANGES IN SOCIOMETRIC TEST RESULTS
OF UNDERACHIEVERS FOLLOWING TREATMENTS

Comparisons	Average Change in Number of Nominations		U
Sit By			
Male ^a vs. Female ^b	.011	vs. -.026	2.140*
High Ability ^c vs. Low Ability ^d	-.014	vs. .016	1.395
Work With			
Male vs. Female	-.001	vs. -.009	.392
High Ability vs. Low Ability	-.011	vs. .009	1.285
Play With			
Male vs. Female	.007	vs. -.008	.159
High Ability vs. Low Ability	-.001	vs. .007	.696

*Significant at the .05 level

^aMale N=79

^bFemale N=29

^cHigh Ability N=54

^dLow Ability N=54

Table 8

RESULTS OF GROUPS-WITHIN-TREATMENT ANALYSIS OF VARIANCE FOR CHANGE IN
GRADE POINT AVERAGE FOR TREATMENTS

	Ind	Grp	Read	Hawth	Control	F
						df 4/17
Mean GPA Increase	.23	.08	.23	.13	.32	.625

Table 9
 MEAN CHANGE IN GRADE POINT AVERAGE FOLLOWING
 TREATMENTS WHEN COMPARED BY SEX

	Mean GPA Change				
	Ind	Grp	Read	Hawth	Control
Male	.22	.31	.22	.18	.31
Female	.16	-.37	.24	.06	.09

Table 10

RESULTS OF A 2 X 5 ANALYSIS OF VARIANCE OF CHANGE IN
GRADE POINT AVERAGE WHEN COMPARED BY SEX
FOLLOWING TREATMENTS

Source of Variance	df	Mean Squares	F
Sex	1	1.090	5.220*
Treatments	4	.095	.045
Sex/Treatments	4	.385	1.473
Within	89	.209	

*Significant at the .05 level

Table 11
RESULTS OF t COMPARISONS OF CHANGES IN GRADE POINT AVERAGE
FOLLOWING TREATMENTS WHEN COMPARED BY SEX

Treatments	Mean GPA Change		df	t
	Male	Female		
Individual	.22	vs. .16	89	.43
Group	.31	vs. -.37	89	4.86*
Reading	.22	vs. .24	89	.14
Hawthorne	.18	vs. .06	89	.86
Control	.31	vs. .09	89	1.57

*Significant at the .001 level

Table 12
MEAN CHANGE IN GRADE POINT AVERAGE FOLLOWING TREATMENTS
WHEN COMPARED BY ABILITY LEVEL

	Mean GPA Change				
	Ind	Grp	Read	Hawth	Control
High Ability	.24	-.07	.33	.04	.28
Low Ability	.13	-.16	.16	.11	.09

Table 13
RESULTS OF A 2 X 5 ANALYSIS OF VARIANCE OF CHANGE IN
GRADE POINT AVERAGE FOLLOWING TREATMENTS
WHEN COMPARED BY ABILITY LEVEL

Source of Variance	df	Mean Squares	F
Ability Level	1	.210	2.187
Treatments	4	.352	1.312
Ability/Treatments	4	.072	.437
Within	77	.155	

Table 14

RESULTS OF GROUPS-WITHIN-TREATMENT ANALYSIS OF VARIANCE OF MEAN CHANGE
ON THE CALIFORNIA TEST OF PERSONALITY WHEN COMPARED BY TREATMENTS

Variable N=	Mean Change					F df 4/17
	Ind 4	Grp 4	Read 4	Hawth 4	Control 6	
Self-Reliance	.95	.55	- .10	.64	1.23	1.807
Sense of Personal Worth	- .41	-1.12	- .86	-1.26	.00	.630
Sense of Personal Freedom	-1.10	.00	- .10	- .15	- .15	.202
Feeling of Belonging	- .29	-3.13	.11	- .29	- .79	.318
Freedom from Withdrawing Tendencies	.15	.42	.77	1.55	1.17	.795
Freedom from Nervous Symptoms	1.46	.47	1.35	.44	.44	1.660
Personal Adjustment	1.01	-1.17	1.25	1.21	.80	.195
Social Standards	.16	1.83	.06	.67	- .45	3.195*
Social Skills	- .06	.90	- .80	1.34	.30	.852
Freedom from Anti-Social Tendencies	- .08	.51	- .61	1.06	.69	.878

Table 14 Continued on Next Page

Table 15

RESULTS OF t TESTS AMONG TREATMENT GROUPS
ON THE SOCIAL STANDARDS SCALE

Comparison	Mean Change	df	t
Individual vs. Group	.16 vs. 1.83	17	2.319*
Individual vs. Reading	.16 vs. .06	17	.138
Individual vs. Hawthorne	.16 vs. .67	17	.708
Individual vs. Control	.16 vs. -.45	17	.924
Group vs. Reading	1.83 vs. .06	17	2.458*
Group vs. Hawthorne	1.83 vs. .67	17	1.611
Group vs. Control	1.83 vs. -.45	17	3.454**
Reading vs. Hawthorne	.06 vs. .67	17	.847
Reading vs. Control	.06 vs. -.45	17	.772
Hawthorne vs. Control	.67 vs. -.45	17	.169

*Significant at the .05 level

**Significant at the .01 level

Table 16

MEANS AND STANDARD DEVIATIONS FOR CHANGE ON THE CALIFORNIA TEST OF PERSONALITY
VARIABLES FOLLOWING TREATMENTS WHEN COMPARED BY SEX

Variable	Sex	Individual		Group		Reading		Hawthorne		Control	
		M	SD	M	SD	M	SD	M	SD	M	SD
Self-Reliance	Male	.85	2.32	1.14	1.92	-.29	2.05	1.00	1.88	1.78	2.07
	Female	1.28	1.38	-.72	2.96	-.15	1.12	.00	1.77	.14	.98
Sense of Personal Worth	Male	-.15	2.99	-.50	3.24	-.58	3.33	-.72	2.15	1.71	2.81
	Female	-1.15	2.69	-2.29	3.36	-1.86	3.44	-2.29	1.66	-2.00	3.07
Sense of Personal Freedom	Male	-1.58	2.22	1.00	3.07	.07	2.31	.14	2.64	.42	2.99
	Female	.28	1.57	-2.00	3.42	-.58	2.55	-.72	1.27	.14	1.12
Feeling of Belonging	Male	-.65	2.09	-.86	3.04	.00	2.69	-.29	2.83	.00	2.17
	Female	.14	1.24	-3.15	2.99	.28	3.73	.00	2.07	-1.72	2.54
Freedom from Withdrawing Tendencies	Male	-.29	2.05	.78	3.12	.35	2.71	1.92	1.86	1.00	1.73
	Female	1.00	2.50	-.58	.72	2.14	2.64	.28	2.05	3.71	2.43
Freedom from Nervous Symptoms	Male	1.50	2.79	.71	2.34	1.21	3.14	.42	2.12	-.36	2.19
	Female	1.28	.88	.00	2.00	1.14	3.87	.42	2.44	2.14	1.72

Table 16 Continued on Next Page

Table 16 Continued

MEANS AND STANDARD DEVIATIONS FOR CHANGE ON THE CALIFORNIA TEST OF PERSONALITY
VARIABLES FOLLOWING TREATMENTS WHEN COMPARED BY SEX

Variable	Sex	Individual		Group		Reading		Hawthorne		Control	
		M	SD	M	SD	M	SD	M	SD	M	SD
Personal Adjustment	Male	-.22	8.80	2.50	10.82	1.28	9.92	2.42	8.27	3.14	9.97
	Female	4.14	7.27	-8.72	11.58	.71	11.57	-1.29	4.94	2.85	10.03
Social Standards	Male	.28	2.43	2.64	2.74	.07	2.01	.57	2.29	-.43	1.44
	Female	-.43	1.29	.28	2.18	.00	.92	.85	2.69	.00	.75
Social Skills	Male	-.43	2.35	1.00	2.92	-.65	1.49	1.85	2.55	.21	2.04
	Female	.85	2.03	.42	2.82	1.14	2.53	.00	2.39	.00	1.77
Freedom from Anti-Social Tendencies	Male	-1.08	2.63	1.57	2.32	-.50	3.81	1.42	3.06	1.21	4.16
	Female	.71	1.90	-1.58	3.24	-.43	2.38	-.39	3.91	1.00	.53
Family Relations	Male	-.72	2.68	1.28	3.34	.50	2.69	.50	1.54	-.43	2.71
	Female	-2.29	1.66	-1.58	4.10	-.58	2.19	.14	2.03	.14	1.35
School Relations	Male	-.43	3.59	.42	2.25	.71	2.86	1.00	2.17	.50	3.64
	Female	.28	1.74	-2.15	3.97	-.15	2.94	.42	1.76	-1.00	2.67

Table 16 Continued on Next Page

Table 16 Continued

MEANS AND STANDARD DEVIATIONS FOR CHANGE ON THE CALIFORNIA TEST OF PERSONALITY
VARIABLES FOLLOWING TREATMENTS WHEN COMPARED BY SEX

Variable	Sex	Individual		Group		Reading		Hawthorne		Control	
		M	SD	M	SD	M	SD	M	SD	M	SD
Community Relations	Male	.28	2.01	1.85	3.02	1.07	2.31	.28	1.33	.21	2.07
	Female	-.86	3.52	-.29	1.38	1.28	4.68	.14	3.04	-.29	1.16
Social Adjustment	Male	-2.08	9.69	8.85	10.28	1.21	9.42	5.64	8.39	1.14	10.62
	Female	-1.72	6.20	-2.29	14.57	2.42	6.94	1.28	12.66	-1.86	5.40
Total Adjustment	Male	-2.29	16.56	11.50	17.90	2.50	14.38	8.07	14.45	7.14	15.67
	Female	2.71	11.25	-11.00	21.67	-7.15	14.99	-3.29	17.91	10.28	10.69

Table 17

RESULTS OF FIFTEEN 2 X 5 ANALYSIS OF VARIANCE DESIGNS FOR CALIFORNIA
TEST OF PERSONALITY VARIABLES FOLLOWING TREATMENTS
WHEN COMPARED BY SEX

Variable	F/Treatments df 4/77	F/Sex df 1/77	F Treat./Sex df 4/77
Self-Reliance	1.551	3.343	1.155
Sense of Personal Worth	1.085	8.597**	.564
Sense of Personal Freedom	.671	1.143	1.994
Feeling of Belonging	1.191	.861	1.165
Freedom from With- drawing Tendencies	1.906	1.234	3.025*
Freedom from Nervous Symptoms	.680	.304	1.074
Personal Adjustment	.483	1.201	1.537
Social Standards	3.176* ^a	1.151	1.260
Social Skills	1.130	.028	1.676
Freedom from Anti- Social Tendencies	1.136	.917	1.554
Family Relations	1.259	3.494	1.040
School Relations	.554	2.290	.734
Community Relations	1.077	1.817	.570
Social Adjustment	1.678	2.534	1.066
Total Adjustment	1.074	4.228*	2.169

^aNote Tables 14 and 15 for comparisons of treatment effects

*Significant at the .05 level

**Significant at the .01 level

Table 18

RESULTS OF t TESTS FOR THE VARIABLES OF SENSE OF PERSONAL WORTH AND
TOTAL ADJUSTMENT FOLLOWING TREATMENTS WHEN COMPARED BY SEX

	Male Mean Change	Female Mean Change	df	t
Sense of Personal Worth				
Individual	- .15	-1.15	89	.704
Group	- .50	-2.29	89	1.260
Reading	- .58	-1.86	89	.901
Hawthorne	- .72	-2.29	89	1.105
Control	1.71	-2.00	89	2.612*
Freedom from Withdrawing Tendencies				
Individual	- .29	1.00	89	1.131
Group	.78	- .58	89	1.192
Reading	.35	2.14	89	1.570
Hawthorne	1.92	.28	89	1.438
Control	1.00	3.71	89	2.377*
Total Adjustment				
Individual	-2.29	2.71	89	.613
Group	11.50	-11.00	89	2.760**
Reading	2.50	- 7.15	89	1.184
Hawthorne	8.07	- 3.29	89	1.393
Control	7.14	10.28	89	.385

*Significant at the .05 level

**Significant at the .01 level

Table 19

MEANS AND STANDARD DEVIATIONS FOR CHANGE ON THE CALIFORNIA TEST OF PERSONALITY VARIABLES
FOLLOWING TREATMENTS WHEN COMPARED BY ABILITY

Variable	Ability Level	Individual		Group		Reading		Hawthorne		Control	
		M	SD	M	SD	M	SD	M	SD	M	SD
Self-Reliance	High	.75	2.81	-.13	2.08	.12	1.61	.00	1.50	1.87	2.71
	Low	.90	2.21	1.00	2.32	-.60	1.49	1.00	2.14	.90	1.37
Sense of Personal Worth	High	-1.00	3.46	-1.00	3.64	-.63	4.15	-1.38	1.73	.75	1.63
	Low	.90	2.21	-1.10	3.61	-.90	3.08	-.90	1.86	-.90	3.70
Sense of Personal Freedom	High	.00	2.39	-.13	3.44	-1.00	1.80	-1.50	1.58	-.50	2.23
	Low	-1.90	1.97	-.30	3.49	-.40	2.49	1.20	2.44	1.30	2.64
Feeling of Belonging	High	-.50	1.11	-2.50	4.09	-.88	4.56	.50	2.91	.00	2.06
	Low	-.10	2.30	-.50	3.07	.50	1.20	.00	2.00	.10	2.91
Freedom from Withdrawing Tendencies	High	.25	2.04	.25	2.90	1.87	3.13	2.50	2.29	1.75	2.72
	Low	-.10	2.73	-.10	1.22	.50	2.20	.40	1.62	2.40	2.15
Freedom from Nervous Symptoms	High	1.50	2.44	1.25	2.81	2.25	4.02	.37	2.34	.37	2.86
	Low	1.50	2.57	.00	1.84	.30	2.64	1.20	2.13	1.90	2.07

Table 19 Continued on Next Page

Table 19 Continued

MEANS AND STANDARD DEVIATIONS FOR CHANGE ON THE CALIFORNIA TEST OF PERSONALITY VARIABLES
FOLLOWING TREATMENTS WHEN COMPARED BY ABILITY

Variable	Ability Level	Individual		Group		Reading		Hawthorne		Control	
		M	SD	M	SD	M	SD	M	SD	M	SD
Personal Adjustment	High	4.12	9.91	2.25	14.76	1.62	14.77	1.12	7.40	4.00	8.15
	Low	.10	7.77	-1.10	10.37	-.10	6.68	3.00	7.26	6.70	10.98
Social Standards	High	1.25	1.98	2.75	3.23	-.25	2.16	1.75	1.39	.37	.48
	Low	-.60	2.15	1.90	1.97	-.30	1.18	.00	2.72	-1.30	1.67
Social Skills	High	.12	2.84	-.25	3.41	.62	2.44	-.50	3.84	.12	1.83
	Low	.00	1.94	1.80	1.77	-.10	1.70	2.00	2.32	-.10	2.34
Freedom from Anti-Social Tendencies	High	-.50	2.91	1.00	1.87	-.25	3.56	1.75	3.52	1.12	2.84
	Low	-.80	2.52	-.10	3.38	-.50	3.35	.00	3.37	.70	3.06
Family Relations	High	-1.13	3.13	-.75	3.86	-.38	2.82	.00	1.41	.50	2.50
	Low	-1.20	2.27	1.10	3.20	.50	2.57	.70	1.90	.70	2.79
School Relations	High	1.12	2.89	-1.38	1.86	-.25	2.94	1.25	1.92	.25	3.83
	Low	-1.20	3.37	.20	3.76	-.40	2.53	.30	1.73	.40	2.41

Table 19 Continued on Next Page

Table 19 Continued

MEANS AND STANDARD DEVIATIONS FOR CHANGE ON THE CALIFORNIA TEST OF PERSONALITY VARIABLES
FOLLOWING TREATMENT WHEN COMPARED BY ABILITY

Variable	Ability Level	Individual		Group		Reading		Hawthorne		Control	
		M	SD	M	SD	M	SD	M	SD	M	SD
Community Relations	High	.50	3.08	-.75	2.68	.75	3.19	.37	1.49	1.50	2.78
	Low	-.40	2.61	2.40	1.80	.40	3.92	.10	2.50	.30	1.84
Social Adjustment	High	1.37	10.42	-.63	10.31	.25	11.51	7.12	9.29	3.62	11.23
	Low	-4.20	7.48	9.20	10.36	1.20	5.68	3.10	10.94	.20	7.63
Total Adjustment	High	3.00	19.53	-1.63	22.79	1.87	21.04	8.25	14.26	7.62	18.19
	Low	-4.10	12.39	8.20	16.62	1.10	8.40	6.10	16.99	11.10	14.32

Table 20

RESULTS OF FIFTEEN 2 X 5 ANALYSIS OF VARIANCE DESIGNS FOR CALIFORNIA
TEST OF PERSONALITY VARIABLES FOLLOWING TREATMENTS
WHEN COMPARED BY ABILITY LEVEL

Variable	F/Treatments df 4/77	F/Ability Level df 1/77	F Treat./Ability df 4/77
Self-Reliance	1.280	.060	.852
Sense of Personal Worth	.480	.010	.702
Sense of Personal Freedom	.894	1.121	1.947
Feeling of Belonging	.834	1.157	.513
Freedom from With- drawing Tendencies	2.280	1.793	.809
Freedom from Nervous Symptoms	.317	.085	1.199
Personal Adjustment	1.065	.000	.302
Social Standards	4.878* ^a	7.300*	.573
Social Skills	.507	1.537	1.374
Freedom from Anti- Social Tendencies	.812	1.208	.174
Family Relations	1.066	1.352	.295
School Relations	.511	.286	1.020
Community Relations	.383	.020	1.695
Social Adjustment	1.390	.044	1.680
Total Adjustment	1.024	.030	.577

^aNote Tables 14 and 15 for comparison of treatment effects
*Significant at the .01 level

Table 20

RESULTS OF FIFTEEN 2 X 5 ANALYSIS OF VARIANCE DESIGNS FOR CALIFORNIA
TEST OF PERSONALITY VARIABLES FOLLOWING TREATMENTS
WHEN COMPARED BY ABILITY LEVEL

Variable	F/Treatments df 4/77	F/Ability Level df 1/77	F Treat./Ability df 4/77
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Family Relations	1.066	1.352	.295
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Community Relations	.383	.020	1.695
Social Adjustment	1.390	.044	1.680
Total Adjustment	1.024	.030	.577

^aNote Tables 14 and 15 for comparison of treatment effects
*Significant at the .01 level

Table 21

RESULTS OF t TESTS FOR THE VARIABLE OF SOCIAL STANDARDS
FOLLOWING TREATMENTS WHEN COMPARED BY ABILITY LEVEL

	High Ability Mean Change	Low Ability Mean Change	df	t
Individual	1.25	- .60	77	1.813
Group	2.75	1.90	77	.833
Reading	- .25	- .30	77	.049
Hawthorne	1.75	.00	77	1.715
Control	.37	-1.30	77	1.637

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